

Notice of Allowability

Application No.

10/518,635

Examiner

Jonathan Dunlap

Applicant(s)

SHIMA ET AL.

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to drafted claims faxed to the Examiner on July 26, 2007.
2. ☒ The allowed claim(s) is/are 3-6, 9-17 and 19-25.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 20070705 20070713
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


MICHAEL CYGAN, Ph.D.
PRIMARY EXAMINER

DETAILED ACTION

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Andrew Baca on July 26, 2007.

Please cancel claims 7 and 8.

Considering claim 9, after "according to" please insert --any one of--.

Considering claim 10, after "according to" please insert --any one of--.

Considering claim 11, after "according to" please insert --any one of claims 22 or 23-- and please delete "claim 7".

Considering claim 17, after "according to" please insert --any one of claims 22 or 23-- and please delete "claim 7".

Considering claim 20, after "according to" please insert --any one of claims 24 or 25-- and please delete "claim 8".

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Please insert after claim 21, --22: An apparatus for measuring forces acted upon a tire, the apparatus comprising: a magnet arranged on an inner peripheral face of a tread portion; and a magnetic sensor attached directly or indirectly through a fitting jig to an outer peripheral face of a rim, wherein the magnet is arranged so that a magnetic force line distribution of a magnetic field forms a plane symmetry with respect to a meridional plane of the tire including a point P or a point Q under no action of external force to the tire, the magnet having magnetic poles of the same polarity at both ends in a longitudinal direction.--.

Please insert after claim 22, --23: An apparatus for measuring forces acted upon a tire, the apparatus comprising: a magnet arranged on an inner peripheral face of a tread portion; and a magnetic sensor attached directly or indirectly through a fitting jig to an outer peripheral face of a rim, wherein a pair of magnets are arranged near to each other so that changes of widthwise components of magnetic flux densities formed along a peripheral direction of the tire form a reversal relation under no action of external force to the tire.--.

Please insert after claim 23, --24: An apparatus for measuring forces acted upon a tire, the apparatus comprising: a magnet arranged on an inner peripheral face of a tread portion; and a magnetic sensor attached directly or indirectly through a fitting jig to an outer peripheral face of a rim, wherein the magnet is arranged so that a magnetic force line distribution of a magnetic field forms a plane symmetry with respect to a meridional plane of the tire including a point P or a point Q under no action of external

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force to the tire, the magnet having magnetic poles of the same polarity at both ends in a longitudinal direction.--.

Please insert after claim 24, --25: An apparatus for measuring forces acted upon a tire, the apparatus comprising: a magnet attached directly or indirectly through a fitting jig to an outer peripheral face of a rim; and a magnetic sensor arranged on an inner peripheral face of a tread portion, wherein a pair of magnets are arranged near to each other so that changes of widthwise components of magnetic flux densities formed along a peripheral direction of the tire form a reversal relation under no action of external force to the tire.--.

Allowable Subject Matter

1. Claims 3-6, 9-17 and 19-25 are allowed.
2. The following is an examiner's statement of reasons for allowance:

Considering claim 3, the prior art made of record fails to disclose or suggest that the measurement of the flux density is conducted by using the magnet arranged so that a magnetic force line distribution of the magnetic field forms a plane symmetry with respect to a meridional plane of the tire including the point P or the point Q under not action of external force to the tire, and the force acting in the peripheral direction of the tire is determined from an average between maximum value and minimum value of a variant pattern of a tire peripheral component in the measured magnetic flux density and

the force acting in the radial direction of the tire is determined from a difference between the maximum value and the minimum value of the variant pattern.

Considering claim 4, the prior art made of record fails to disclose or suggest that the measurement of the flux density is conducted by using the magnet arranged so that a magnetic force line distribution of the magnetic field forms a plane symmetry with respect to a meridional plane of the tire including the point P or the point Q under no action of external force to the tire, and the force acting in the radial direction of the tire is determined from a maximum value or a minimum value of a variant pattern of a tire radial component of the measured magnetic flux density.

Considering claim 5, the prior art made of record fails to disclose or suggest that the measurement of the magnetic flux density of the tire is conducted by using the magnet arranged so that a widthwise component of a magnetic flux density of the magnetic field changes along the peripheral direction of the tire under no action of external force to the tire, and the force acting in the peripheral direction of the tire is determined from an average between maximum value and minimum value of a variant pattern of a tire widthwise component in the measured magnetic flux density and the force acting in the radial direction of the tire is determined from a difference between the maximum value and the minimum value of the variant pattern.

Considering claim 6, the prior art made of record fails to disclose or suggest that the measurement of the magnetic flux density is carried out in parallel with respect to a pair of magnets arranged near to each other so that changes of widthwise components of magnetic flux densities formed along the peripheral direction of the tire form a

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reversal relation under no action of external force to the tire, and when an average value of maximum values in a reversal pattern reversed from a variant pattern of the magnetic flux density of the tire widthwise component measured on one of the magnets and in a variant pattern of the magnetic flux density of the tire widthwise component measured on the other magnet is an average maximum value, the force acting in the peripheral direction of the tire is determined from an average between the average maximum value and the average minimum value, and the force acting in the radial direction of the tire is determined from a difference between the average maximum value and the average minimum value.

Considering claim 22, the prior art made of record fails to disclose or suggest that a magnet is arranged so that a magnetic force line distribution of the magnetic field forms a plane symmetry with respect to a meridional plane of the tire including the point P or the point Q under not action of external force to the tire, the magnet having magnetic poles of the same polarity at both ends in a longitudinal direction.

Considering claim 23, the prior art made of record fails to disclose or suggest that a pair of magnets are arranged near to each other so that changes of widthwise components of magnetic flux densities formed along the peripheral direction of the tire form a reversal relation under no action of external force to the tire.

Considering claim 24, the prior art made of record fails to disclose or suggest that a magnet is arranged so that a magnetic force line distribution of the magnetic field forms a plane symmetry with respect to a meridional plane of the tire including the point

P or the point Q under not action of external force to the tire, the magnet having magnetic poles of the same polarity at both ends in a longitudinal direction.

Considering claim 25, the prior art made of record fails to disclose or suggest that a pair of magnets are arranged near to each other so that changes of widthwise components of magnetic flux densities formed along the peripheral direction of the tire form a reversal relation under no action of external force to the tire.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Dunlap whose telephone number is (571) 270-1335. The examiner can normally be reached on M-F 8-5 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.


For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.




Jonathan Dunlap

Examiner

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July 26, 2007



MICHAEL CYGAN, PH.D.
PRIMARY EXAMINER